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CMFRI Newsletter

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Dr. A. Gopalakrishnan, Director, CMFRI receives the *Indira Gandhi Rajbhasha Puraskar* from the Hon'ble President of India

see page 20



हर कदम, हर डगर
किसानों का हमसफर
भारतीय कृषि अनुसंधान परिषद

AgriSearch with a human touch

Indian Council of Agricultural Research
CENTRAL MARINE FISHERIES RESEARCH INSTITUTE
P.B. No. 1603, Ernakulam North P.O., Kochi - 682 018, Kerala, India

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DIRECTOR SPEAKS



As we enter the last quarter of the year 2014 it is time to take stock of our achievements and also set the pace to complete the remaining tasks. Undoubtedly, winning the *Indira Gandhi Rajbhasha Puraskar* 2012-13 is a feather in our cap. On the request of policy makers, scientists of the Institute have successfully

completed the exercise of fixing the Minimum Legal Sizes (MLS) for fifty eight commercially important marine fish species. This has been accepted by the Government of Kerala and will go a long way in ensuring sustainability of the marine capture fisheries sector. The report of the Technical Committee to review the fishing ban period prepared on the request of DAHD&F, Ministry of Agriculture has also been submitted. The commissioning of the new vessel *R.V. Cadalmin I* well equipped to undertake fishing voyages and conduct oceanographic research is aimed at further strengthening the Institute's at-sea research programs and bring in lot of valuable information that can be applied in fisheries management.

On the mariculture front, it is encouraging to note that the open sea cage farming technology developed by the institute has been enthusiastically adopted by fishermen groups and entrepreneurs, as vouched by success stories from several parts of India. That this technology has also become a tool for empowering various sections of the society, like the case of *Sidi* tribals of Gujarat who are all set to repeat their success by launching new cages for the third consecutive year, speaks for itself.

Recently, CITES, which is a global instrument for regulating International trade included six more species of elasmobranchs in its Appendix II which has evoked great concern and debates among the various stake holders. In this context, CMFRI as the designated Scientific Authority to provide information on their sustainable levels of harvest, has a major responsibility to fulfil in the coming days.

As this year draws to a close, I wish everybody a wonderful quarter ahead and success in their endeavours to achieve the targets set.

A. Gopalakrishnan
Director

About CMFRI

The Central Marine Fisheries Research Institute, Kochi, is a premier research Institute under the Indian Council of Agricultural Research, devoted to research and training in marine fisheries and mariculture.

CMFRI has three Regional Centres viz., Mandapam Camp, Visakhapatnam and Veraval and seven Research Centres located along the Indian coastline, catering to the marine fishery policy needs of all maritime states of the country.

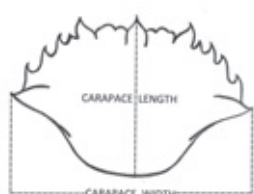


Minimum Legal Sizes fixed for 58 commercial marine fish species

Growth overfishing due to over-exploitation of juvenile fishes results in considerable economic loss besides serious damage to the fish stock in terms of long-term sustainability of the resources. A Minimum Legal Size (MLS) is seen as a fisheries management tool with the

ability to protect juvenile fish, maintain spawning stocks and control sizes of fish caught. With the aim of increasing the economic efficiency and sustainability of the marine fisheries sector, recently the Department of Fisheries, Govt. of Kerala (DoF-GoK) requested the institute to provide necessary guidance for a policy formulation. Based on the historic data sets on maturity and biology of various marine fishery resources monitored, the scientists recommended the MLS for 58 commercially important marine fish species which comprises 40 finfishes including oil sardine, Indian mackerel,

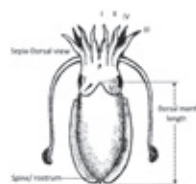
eight species of tunas, ribbonfish, seerfishes, threadfinbreams and pomfrets, 13 crustaceans including crabs, lobsters and shrimps and 5 species of molluscs including clams, octopus, squid and cuttlefish. The recommendations came against the backdrop of large number of juveniles caught in trawls and seine nets which was routed to fishmeal plants and hence harmfully impacted the sustainability of commercially important fish stocks. The DoF-GoK has already started implementation of the guidelines through its marine enforcement wing. This can serve as a model for other maritime states also.



Morphometric
Measurement of Crab



Morphometric
Measurement of Squid



Morphometric
Measurement of Cuttle fish



Morphometric
Measurement of Tuna

Species Name	Common Name	Recommended MLS (cm) (g*)
Pelagic Fish Stocks		
<i>Sardinella longiceps</i>	Oil sardine	10 TL
<i>Rastrelliger kanagurta</i>	Indian mackerel	14 TL
<i>Euthynnus affinis</i>	Little tuna	31 FL
<i>Auxis thazard</i>	Frigate tuna	25 FL
<i>Katsuwonus pelamis</i>	Skipjack tuna	35 FL
<i>Thunnus albacares</i>	Yellowfin tuna	50 FL
<i>Auxis rochei</i>	Bullet tuna	18 FL
<i>Sarda orientalis</i>	Bonito	35 FL
<i>Thunnus tonggol</i>	Longtail tuna	44 FL
<i>Gymnosarda unicolor</i>	Dogtooth tuna	50 FL
<i>Scomberomorus commerson</i>	Kingseer	50 FL
<i>Scomberomorus guttatus</i>	Spotted seer	37 FL
<i>Rachycentron canadum</i>	Kingfish	61 FL
<i>Coryphaena hippurus</i>	Dolphin fish	38 FL
<i>Trichiurus lepturus</i>	Ribbon fish	46 TL
<i>Megalaspis cordyla</i>	Horse mackerel	19 TL
<i>Selar crumenophthalmus</i>	Big-eye scad	16 TL
<i>Decapterus russelli</i>	Indian scad	11 TL

Demersal Fish Stocks

<i>Cynoglossus macrostomus</i>	Malabar sole	9 TL
<i>Nemipterus japonicus</i>	Threadfin bream (yellow)	12 TL
<i>Nemipterus randalli</i>	Threadfin bream (red)	10 TL
<i>Lactarius lactarius</i>	Whitefish	10 TL
<i>Saurida tumbil</i>	Greater lizard fish	17 TL
<i>Saurida undosquamis</i>	Lizard fish	10 TL
<i>Pampus argenteus</i>	Silver pomfret	13 TL
<i>Parastromateus niger</i>	Black pomfret	17 TL
<i>Priacanthus hamrur</i>	Bull's eye	14 TL
<i>Otolithes ruber</i>	Tiger toothed croaker	17 TL
<i>Otolithes cuvieri</i>	Lesser tiger toothed croaker	16 TL
<i>Johnius sina</i>	Sin croaker	11 TL
<i>Johnius carutta</i>	Karut croaker	15 TL
<i>Johnius belangerii</i>	Belanger's croaker	14 TL
<i>Johnius glaucus</i>	Pale spotfin croaker	15 TL
<i>Nibea maculata</i>	Blotched croaker	14 TL

<i>Pennahia anea</i>	Big eye croaker	13 TL
<i>Epinephelus diacanthus</i>	Spiny cheek grouper	18 TL
<i>Himantura imbricata</i>	Scaly whipray	14 DW
<i>Himantura jenkinsii</i>	Pointed nose stingray	61 DW
<i>Gymnura poecilura</i>	Long-tailed butterfly ray	29 DW
<i>Rhizoprionodon oligolinx</i>	Grey sharp nose shark	53 TL

Crustacean Stocks

<i>Charybdis feriatus</i>	Crucifix crab	5 CW
<i>Portunus sanguinolentus</i>	Spotted crab	7 CW
<i>Portunus pelagicus</i>	Blue crab	9 CW
<i>Metapenaeus dobsoni</i>	Flowertail prawn	6 TL
<i>Parapenaeopsis styliifera</i>	Kiddi prawn	7 TL
<i>Metapenaeus monoceros</i>	Speckled prawn	11 TL
<i>Metapenaeus affinis</i>	Jinga prawn	9 TL

<i>Plesionika quasigrandis</i>	Oriental narwhal shrimp	8 TL
<i>Aristeus alcocki</i>	Arabian red shrimp	13 TL
<i>Panulirus homarus</i>	Scalloped spiny lobster	200 g
<i>Panulirus polyphagus</i>	Mud spiny lobster	300 g
<i>Panulirus ornatus</i>	Ornate spiny lobster	500 g
<i>Thenus unimaculatus</i> (= <i>T. orientalis</i>)	Sand lobster	150 g

Molluscan Stocks

<i>Uroteuthis (Photololigo) duvauceli</i>	Indian squid	8 DML
<i>Sepia pharaonis</i>	Pharaoh cuttlefish	11 DML
<i>Amphioctopus neglectus</i>	Ocellate octopus	5 DML
<i>Paphia malabarica</i>	Short-neck clam	2 APM
<i>Villorita cyprinoides</i>	Black clam	2 APM

TL - Total length; FL - Fork length; SL - Standard length; CW - Carapace width; DML - Dorsal mantle length; APM - Anterior-Posterior Margin
g - grams; cm - centimetre

International Coastal Cleanup Day - 2014 observed

On the third Saturday of September each year, volunteers around the world take part in the world's biggest coastal cleanup, known as the International Coastal Cleanup Day. The Mandapam Regional Centre of CMFRI celebrated the day through a beach clean-up activity at Maraikayarpattinam beach on 20th September 2014. A large

panchayat took part in the event and removed around half a ton of plastic waste such as carry bags, plastic utensils, nylon ropes etc from the one kilometer stretch of the Maraikayar pattinam beach. On this occasion, Dr. G. Gopakumar, SIC Mandapam RC of CMFRI released a poster and brochure and also explained the significance of the day to the people

around the world get an opportunity to clean up the anthropogenic pollution of the coast which affects the marine biodiversity and fish production. In the Gulf of Mannar, the event is of special significance due to the rich coral reef biodiversity there. This event was co-ordinated by Shri. R. Saravanan, Scientist.



Release of poster on the International Coastal Cleanup Day

number of scout students and teachers from the Kendriya Vidyalaya, Mandapam, staff of CMFRI and residents of Maraikayarpattinam

assembled. Marine debris and litter, especially non-biodegradable wastes is a cause of concern due to its ill effects on the environment. On this day citizens



Volunteers involved in coastal clean-up activities

(Reported by: G. Gopakumar, R. Saravanan, Johnson, B., N. Ramamoorthy, I. Syed Sadiq and K. Shanmuganathan)

Marketing live Asian seabass from open sea cages - a step forward

An MoU had been signed between the Association of Kovalam Progressive Fishermen (AKPF) of Kovalam village, Kancheepuram district of Tamil Nadu and Madras Research Centre of CMFRI for operating a GI cage off Kovalam, for seabass culture, which has paid rich dividend. Ten fishermen youth members of the AKPF who had earlier participated in the open sea cage culture demonstration programs carried out by the Kovalam Field laboratory on a participatory mode were specifically trained in nursery and sea cage rearing operations.

A GI cage (5m outer diameter, 4m inner diameter and 3m depth) was fabricated and moored at a site of 8 m depth, about 1 km from Kovalam shore. The cage was stocked on 3rd June 2014 with 1500 fingerlings of Asian Seabass *Lates calcarifer* of an average weight 60g. Culture operations were carried out for a period of 100 days, using low cost Tilapia caught from the backwaters of Muttukkadu, as feed.

The harvest was done on 16th September 2014. The harvested biomass was 600 kg, with a survival rate of 80%. The harvested sizes ranged between 0.44 to 1.1 kg, with an average size of 0.5 kg. An



Live seabass harvested from the cage

innovation in marketing was that the harvested fish was sold live to a recreational sport fishing agency in Chennai @ ₹ 400/- per kg. The total produce thus realised a value of ₹ 2,40,000/-. The fish were transported live, by road for over an hour with no mortality, and transferred to the freshwater sport fishing facility. Short grow-out period and new marketing avenues with a higher value realization have added a new dimension to the scope of open sea mariculture in India.

The harvest, packaging and sale was done in the presence of Dr. Beela Rajesh, IAS, Commissioner of Fisheries, Tamil Nadu, Dr. M. Sakthivel, Former Chairman, MPEDA, Dr. G. Gopakumar, Head, Mariculture Division & SIC, Mandapam Regional Centre of CMFRI, Dr. K. Vijayakumaran, Scientist-in-Charge, Madras Research Centre of CMFRI, Dr. A.R.T. Arasu, Former Head, Fish Culture Division,



Dignitaries on the dais at the harvest mela



Handing over of cheque to the AKPF members

CIBA, Thiru S. Janakiraman, Kovalam Panchayat President, officials of the Tamil Nadu Fisheries Department, Scientists and staff representatives from CIBA and Madras RC of CMFRI, Chennai, AKPF members and fishermen of Kovalam.

(Reported by: Joe K. Kizhakudan, Madras RC)

Dr. Beela Rajesh, IAS, Commissioner of Fisheries, Tamil Nadu with the harvested live fish



Cage culture : A success story from Rajulalanka



Under the technical guidance of Visakhapatnam RC of CMFRI in January, 2014, six galvanized iron (GI) cages measuring 6 m in diameter and 4 m in depth were installed using pole mooring, in the river Godavari in Rajulalanka, Narsapuram in the West Godavari district of Andhra Pradesh. The cages were stocked in February with approximately 7200 seabass fingerlings ranging in size from 15 to 30 g and 4000 mullet wild fry weighing 2 to 3 g collected from the wild. About 2.4 lakh hatchery reared PL/11 of *Litopenaeus vannamei* was also stocked during the third week of May.

Seabass was fed with fish (*Tilapia*)

@ 6 – 8 % of their body weight. The feeding regime followed was: 8% of body weight twice daily during the first two months, 7% of body weight thrice daily during the third and fourth months and 6% of body weight four times a day, during the last month. The stocked seabass grew well and reached an average weight of $649 \pm 272/g$ and $354.55 \pm 45.16/mm$ after five months when they were harvested. Their weight ranged from 199 to 499 g and measured 270 to 485 mm. Survival at the end of the five month culture period was 86% with harvest weight of around 4 tonnes. The harvested fishes fetched a farm gate price of ₹ 330 per kg.



Initially mullets were fed once daily with pelleted feed and subsequently twice daily, once with pelleted feed and the other with rice bran powder. Mulletts reached an average 250/g after five months of rearing. The culture for mullets is in progress.

Litopenaeus vannamei PL was fed with pelleted feed and they grew to an average 12.6 g (80 count) after 68 days of culture. Feed tray was checked on an hourly basis and feeding was done on demand. Survival recorded was 66%. The total quantity harvested was around 2 tonnes. Half of the harvested shrimps were sold at a farm gate price of ₹ 243 per/kg and the rest was restocked in pond for further culture.



Stranded whale beached off the coast of Kaup, Udupi

The carcass of a baleen whale was beached at Kaipunjae of Kaup Coast, Udupi district on 1st September 2014. The whale carcass was found to be in a putrefied and highly decomposed stage rendering it difficult to take morphometric measurements.



Whale stranded in Kaup coast, Udupi



New research vessel *R.V. Cadalmin I* commissioned

New research vessel being commissioned by Dr. A. Gopalakrishnan, Director, CMFRI

The institute has added a new vessel *R.V. Cadalmin I* that is well equipped to handle on sea fisheries/oceanography research which will be operated from the Visakhapatnam Regional Centre of CMFRI. The vessel is fitted with a four stroke marine propulsion engine (Greaves Cotton-model TBD3V6) of 248 BHP working at 1800 RPM. The wheel house possesses modern navigational instruments, alarms, gauges and indicators. A hydraulic trawl winch with capacity for 500 m long 8 mm diameter steel wire rope on each drum is provided. A derrick of 750 kg capacity and facilities for CTD operation are also available.

The vessel possesses Echo sounder- Fishing (Furno, FCV 587) Global Positioning System (Furno, GP 150), Automatic Identification System (Ray Marine AIS 950), VHF with radio installation (Ray Marine, Ray 49 E) and other essential navigational requirements. Besides, all necessary life-saving equipments including state-of-the-art life buoys with self-igniting lamp and life line, parachute distress signal and offshore first aid kit are provided on-board. Fire

hydrants, fire hoses, fire extinguishers and other required accessories are also available. The vessel is well equipped for water, sediment and plankton sampling using Nansen reversing bottles, Van Veen grab and plankton collection nets. The vessel also has facilities for bottom trawling and is equipped with mini lab to facilitate on-board analysis of biological samples.

Vessel particulars of *R. V. Cadalmin I*

Length OAL	: 13.56 m
Breadth (max)	: 4.66 m
Depth	: 2.56 m
Draft	: 1.56 m
Gross tonnage	: 34 tonnes
Net tonnage	: 10 tonnes
Speed	: 8 knots
Endurance	: 8 days
Crew	: 5
Classification	: IRS Swasthika SUL "Fishing vessel" IY
Type of fishing	: Trawling

Transportation of Pompano fingerlings to different parts of the country

A total of 1,07,395 fingerlings of silver pompano were supplied to fish farmers in Andhra Pradesh, Karnataka and Tamil Nadu during the period of July to September 2014. In addition 15,685 fingerlings of silver pompano were also supplied to the Karwar Research Centre of CMFRI.



Revised list of Elasmobranchs in Appendix- II of CITES effective from 14th September, 2014

The Conference of Parties of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) in its 16th meeting held at Bangkok during 3rd-14th March 2014 has listed five species of sharks and two species of rays on the Appendix II of CITES with effect from 14th September 2014. This new list includes oceanic whitetip shark (*Carcharhinus longimanus*), scalloped hammerhead shark (*Sphyrna lewini*), great hammerhead shark (*Sphyrna mokarran*), smooth hammerhead shark (*Sphyrna zygaena*) porbeagle shark (*Lamna nasus*) and two rays belonging to the genus *Manta*.

With the new listing of elasmobranchs in Appendix II, the specimens (parts and derivatives) along with already listed Basking shark (*Cetorhinus maximus*) great White shark (*Carcharodon carcharias*), scalloped hammerhead shark (*Sphyrna lewini*), whale shark (*Rhincodon typus*) shall be governed by Article IV of the constitution of CITES. Among these listed species, three species of sharks (*Cetorhinus maximus*, *Carcharodon carcharias* and *Lamna nasus*) are not distributed or recorded from Indian waters.



Sphyrna lewini landed at Cochin Fisheries Harbour

It should also be mentioned here that capturing, killing, snaring, trapping and trading is already prohibited for elasmobranch species already included in the Part II A of Schedule I of Indian Wild life (Protection) Act, 1972 which includes the whale shark (*Rhincodon typus*), *Anoxypristis cuspidata*, *Carcharhinus hemiodon*, *Glyphis gangeticus*, *Glyphis glyphis*, *Himantura fluviatilis*, *Pristis microdon*, *Pristis zijsron*, *Rhynchobatus djiddensis* and *Urogymnus asperrimus*.

The export of any specimen of species included in Appendix II require the prior grant and presentation of an export permit which will only be granted when 1) the Scientific Authority need to advice that such export will not be detrimental to the survival of the species 2) the Management Authority of the State is satisfied that the specimens were not obtained in contravention to the laws



Manta birostris (Giant manta ray)

of the State for protection of fauna and flora and 3) the living specimen shipment will not damage its health or subject it to cruel treatment.

The shark and ray species that are listed in the Appendix II of the CITES with effect from 14th September 2014, are not listed in the Wildlife (Protection) Act, 1972, and this may have implications for the fishermen living in coastal areas who fish them to meet their livelihood needs. The Government of India (Ministry of



Carcharhinus longimanus (Oceanic white tip shark)



Sphyrna lewini (Scalloped hammer head shark)

Environment and Forest (Wildlife Division) in its order F.No. 4-45/2014/WL dated 12th September, requested the Dept. of Animal

Husbandry Dairying and Fisheries for instituting the non-detrimental findings (NDF) to know the sustainable harvest level of these species by the Scientific

Authorities (Director, CMFRI) designated by the CITES Management Authority of India. Work on these lines has already been initiated by CMFRI.

Appendix I includes species threatened with extinction, for which trade must be subject to stricter regulation, and can only be authorised in exceptional circumstances for specimens of wild origin. Commercial trade in wild taken specimens of Appendix-I listed species is generally not allowed.

Appendix II includes species that are not necessarily now threatened with extinction but may become so unless trade is strictly regulated. Appendix II further lists so-called "look-alike species" (see Article II, paragraph 2(b) of CITES), which are controlled because of their similarity in appearance to other regulated species, thereby facilitating more effective control.

Appendix III contains species that are subject to regulation within the jurisdiction of a CITES Party and for which the co-operation of other CITES Parties is needed to prevent or restrict their exploitation.

Species listed in Appendix I and II of CITES

Order	Family	Common name	Species
Carcharhiniformes	Carcharhinidae	Oceanic whitetip shark	<i>Carcharhinus longimanus</i>
	Sphyrnidae	Scalloped hammerhead shark	<i>Sphyrna lewini</i>
		Great hammerhead shark	<i>Sphyrna mokarran</i>
		Smooth hammerhead shark	<i>Sphyrna zygaena</i>
Lamniformes	Cetorhinidae	Basking shark	<i>Cetorhinus maximus</i>
	Lamnidae	Mackerel shark	<i>Carcharodon carcharias</i>
		Porbeagle shark	<i>Lamna nasus</i>
Orectolobiformes	Rhincodontidae	Whale shark	<i>Rhincodon typus</i>
Pristiformes	Pristidae	Sawfishes	<i>Anoxypristis cuspidata</i>
			<i>Pristis zijsron</i>
			<i>Pristis pristis</i>
			<i>Pristis microdon</i>
Myliobatiformes	Mobulidae	Giant manta ray	<i>Manta birostris</i>
		Reef manta ray	<i>Manta alfredi</i>

Species included in Part II A of Schedule I of Indian Wild Life (Protection) Act, 1972

Order	Family	Common name	Species
Orectolobiformes	Rhincodontidae	Whale shark	<i>Rhincodon typus</i>
Carcharhiniformes	Carcharhinidae	Pondicherry shark	<i>Carcharhinus hemiodon</i>
		Ganges shark	<i>Glyphis gangeticus</i>
		Speartooth shark	<i>Glyphis glyphis</i>
Myliobatiformes	Dasyatidae	Ganges sting ray	<i>Himantura fluviatilis</i>
Rajiformes	Rhynchobatidae	Porcupine ray	<i>Urogymnus asperrimus</i>
Pristiformes	Pristidae	Giant guitar fish	<i>Rhynchobatus djiddensis</i>
		Knife tooth sawfish	<i>Anoxypristis cuspidata</i>
		Large tooth sawfish	<i>Pristis microdon</i>
		Narrow snout Sawfish	<i>Pristis zijsron</i>

(Prepared by Demersal Fisheries Division, CMFRI and NBFGR Cochin Unit)

Record sized seerfish landed at Malpe Fishing harbour

A very large seerfish *Scomberomorus commerson* was landed at Malpe fishing harbour on 9th September 2014. The single fish which weighed 24.7 kg and measured 5 feet in length, was caught in a troll line operated at 60 fathom depth. The fish was later auctioned at a price of ₹ 10,500 @ ₹ 425/Kg. This is the first time such a big seerfish was landed at Maple fishing harbour.



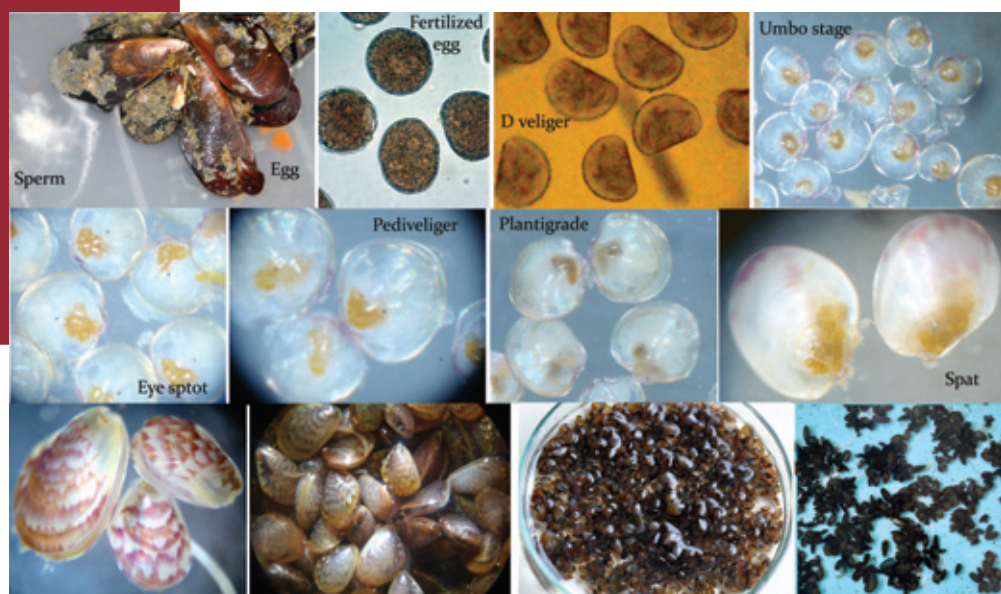
Record sized king seerfish

Revenue Generated by ATIC

The Agriculture Technology and Information Centre (ATIC), generated an amount of ₹ 26,870/- (Rupees twenty six thousand eight hundred and seventy only) through sales and services during the period July-September, 2014.

Successful scaling up of brown mussel spat production

After the first success in the larval rearing of Indian brown mussel *Perna indica* during the eighties, seed production of this species has received little attention. Vizhinjam Research Centre has recently conducted successful trials on seed production of this species and standardised feeding protocol for their large scale spat production. Of the different spat settlers used, rocks and tank bottom



Various development stages in seed production cycle of *Perna indica*

served as the best material for spat settlement compared to split nylon

rope, acrylic sheets and other materials.

Expansion of the open sea cage farming programme for 'Sidi' tribals of Gujarat



The tribals launching the cages

For the third consecutive year, the 'Sidi' tribals have launched open sea cages in the farm site established off Somnath coast at Veraval, Gujarat. The farm is regarded as one of the largest commercial scale sea-cage farm in India comprising of 22 circular cages of 5m diameter tucked nearly half a kilometre away from the seashore and extends to an area of

one kilometre. The innovative moorings designed and deployed during the last year has been successful so far with 100% retention of the mooring points overcoming the rough sea conditions during the monsoon season and enabling early resumption of the farming activities after each cycle. The sea farming activities at Veraval has attracted a large audience interested in the prospects of sea farming. In addition to being a source of livelihood for the tribals the farm also functions as a demonstration and training hub for fishermen, fishery officials, NGO workers, students and private entrepreneurs in the region. Twenty two cages are being deployed during the current year stocked with lobster, pompano and seabass in integration

with the seaweed *Kappaphycus alvarezii*. The project will benefit nearly 110 tribals belonging to 22 tribal families.



Preparation of nets for lobster farming



Juvenile lobsters being stocked in the cages

(Reported by: Divu, D., K. Mohammed Koya, Gyanaranjan Dash, Sreenath K. R., Vinay Kumar Vase, Suresh Kumar and Mahendra Fofandi)

Growth of milkfish (*Chanos chanos*) in the participatory pen farming

The pen farming experiment initiated at Pillaimadam lagoon in Vedalai village is progressing well. Nearly 25,000 milkfish seeds collected from the lagoon with



Monitoring of fish growth



Milkfish Pen farm in Pillaimadam lagoon

average length and weight of 6.3 cm and 4.6 g respectively were introduced in the pen on 10th May 2014. In September when sampling was done the average length recorded was 24 cm weighing about 150 g indicating good progress in their growth.

(Reported by G. Gopakumar, A.K. Abdul Nazar, R. Jayakumar, G. Tamilmani, M. Sakthivel, P. Rameshkumar, B. Johnson and Amir Kumar Samal, Mandapam Regional Centre)

Aggregation of sting rays *Himantura imbricata*

During the second week of September 2014, tourists being attacked by sting rays was reported from Malpe Beach, one of the popular tourist destinations in Udupi District of Karnataka. Detailed investigation revealed these to be scaly whipray, *Himantura imbricata* locally referred to as *Baladae* or *Thorake*. The rays caught were mostly juveniles ranging in the length from 17-20 cm (disc length) and weight from 183-276 g. Adult females were also caught indicating that they had come closer to the sandy beach for breeding as is its breeding behaviour. The sting rays are usually docile creatures seen buried in sand in coastal waters only attacking in self-defence. Most of the stingray related injuries to humans occur to the ankles and legs, when someone accidentally steps on a ray buried in the sand and the fish flips up its tail. Occurrence of scaly sting



Scaly whipray

rays in the near-shore beaches of Malpe during the post monsoon months has been observed in the earlier years but, this year the number of juveniles were more as compared to the previous years. Awareness has to be created among the local as well as the tourists on the breeding

behaviour of the rays and the need to protect them during this period. After a couple of weeks the juveniles would move back into deeper water away from the nearshore nursery grounds and contribute to the fishery of rays.

(Reported by Mangalore RC)

Copepod live feeds perform better in Seahorse rearing



Experiments conducted at Vizhinjam RC using copepod culture (*Temora turbinata* and *Pseudodiaptomus serricaudatus*) as

Growth of seahorse fed with rotifer/Artemia combination (on left) and copepod (on right)

feed for seahorse larvae gave better survival, growth (23mm total length (TL) versus 16 mm TL in 10 days) and colouration compared to the conventional live feeds such as rotifer and Artemia.

Pearl oyster beds indicated

Fishermen operating bottom set gill net (*Nanduvalai*) operated off Vellapatti nearly 2500-3000 numbers of pearl oyster (*Pinctada fucata*) sized 47 to 61 mm and weighing 22 to 31 g. These were collected along with crabs and other fauna on 15th September, 2014 and dumped on the shore by fishermen who were reluctant to reveal the exact location of the catch. It indicated a possible rich source of pearl oyster around this area which needs further precision location marking for future observations and



Oyster are stocked in cages for transplanting to farm estimates of the pearl oyster bed. The oysters were transplanted to farm and



Heap of pearl oysters

stocked in cages immediately but did not survive possibly due to the stress of the exposure on the shore.

(Reported by Dr. I. Jagadis, N. Jesuraj, J. Padmanathan and T. Mohanraj, Tuticorin RC)

Purse seines bring in bumper catches

The large meshed purseseines (*kotibale*) were regularly operated off Mangalore and Udupi coasts since the last week of August. The season started with good catches of oil sardine and later dominated by mackerel. These nets also landed tunas and carangids in considerable quantities. An interesting observation is large sized catfish (*Arius* spp.) was landed in considerable quantities even as high as 1.5 ton in a single operation. This is significant as the catfish population dwindled to near extinction after large scale indiscriminate exploitation of brooders and eggs by purse seiners a decade and a half ago.

Catfish catch landed by purse seines at Mangalore



Bull-trawling operations land juvenile fish

Bull-trawling or paired trawling commenced during August-September along coastal Karnataka soon after the monsoon ban period. The trawling which was carried out in near shore waters at about 10-15 fathom, and later on into deeper

areas. Bull-trawling was carried out by crafts having the regular engines (144 hp) as well as those with speed engines (350 hp and above). This type of fishing generally target squids. However, this year the near shore operations resulted in catches mostly

comprising the small pelagics such as *Thryssa* spp., *Anadontostoma chacunda*, whitebait, silverbellies, and juveniles of rock cods, pomfrets, seerfish and mackerel. The squids were landed in large quantities later on.



Juveniles of queenfish landed by bull trawlers



Squids and cuttlefish landed by bull-trawl

Mechanized multi-day drift gillnets (MDGN) land good catches of oceanic billfishes at Malpe

Multi-day gillnets generally operated by crew from southern Tamil Nadu and Kerala are known to operate in the seamount areas off Karnataka and the catch mostly consists of large sized yellowfin tuna, sharks, dolphinfish, sailfish, billfish and other deep sea fishes. Due to conflicts with local fish merchants and the local fishermen who do not have the skill to fish in the deep seas, these migratory fishermen were not permitted to land

at Mangalore and Malpe harbours. However, this year, these boats were permitted to land their catch at Malpe and since September 2014, large sized fishes have been landed in very good quantities. Though the main mode of exploitation is by large meshed gillnets, they also operate the troll lines hooking large pelagics in good numbers.

(Reported by Mangalore RC)



Skeletal deformation in cobia *Rachycentron canadum* landed off Tuticorin coast

In the course of regular landing observations on the drift gillnet fishery at Threspuram, Tuticorin

coast, a single deformed cobia, *Rachycentron canadum* locally called as "Kadalvaral" was observed on 10th



Deformed cobia from Tuticorin Coast

June, 2014. The specimen measured 92 cm in total length weighed around 4.0 Kg. It had axial deformity and also showed abnormal caudal fin development. Deformities are more common in commercially raised fish than the wild caught fish. Often these are non-lethal malformations that appear during the larval stage but affect growth rate and appearance resulting in downgrading the product value.

(Reported by L. Ranjith. K. P. Kanthan and K. Murugan, Tuticorin RC)

Stranding of Olive Ridley turtles *Lepidochelys olivacea* (Eschscholtz, 1829) at Muthyalapalem, Visakhapatnam

Two Olive ridley turtles were found dead on the sandy shores at Muthyalapalem of Visakhapatnam coast on 3rd July, 2014. The curved carapace length of the turtles were 60 cm and 85 cm weighing 50 kg and 70 kg respectively. It is probable that it was hit by a boat propeller and washed ashore. Olive ridley turtles are categorized as "Endangered" by IUCN Red List (IUCN, 2014) and are included in Schedule I of the Indian Wildlife (Protection) Act, 1972. They are listed in Appendix I of CITES (Convention on International Trade in Endangered Species of Wild Flora and Fauna) and Appendices I and II of the Convention on Migratory Species.

(Reported by V. Uma Mahesh, Pralaya Ranjan Behera, Subhadeep Ghosh and Loveson L. Edward, Visakhapatnam Regional Centre)



Olive Ridley turtles found dead on the sandy shores at Muthyalapalem of Visakhapatnam coast

Workshop on Benefits of MSC certification of Ashtamudi Lake Short-neck Clam Fishery held at CMFRI, Kochi

A consultative workshop on benefits of MSC (Marine Stewardship Council) certification of Ashtamudi Lake Short neck clam fishery was held at CMFRI, Kochi on 4th September, 2014. The aim of workshop was to build awareness on MSC certification and bring together research institutes, development professionals in the government / private sector (seafood industries) to debate on the progress made in the certification, why it is essential and evolve policy on future development.

The workshop was attended by invited scientists/ researchers/ officials/ industry in the field of fisheries and mariculture including Dr. A. Gopalakrishnan, Director, CMFRI, Dr. K.K. Appukuttan, Sh. Vinod Malayilethu, WWF-Kochi, India, Dr. K.S. Mohamed, Head, MFD, Ms. Shassi, MPEDA, Kochi, Sh. M. Thajudeen, State Fisheries Department, Sh. T.N. Venugopalan General Manager, RF Exports, Erammaloor, Sh. D.D. Dominic, General Manager, Esmario Seafoods,



Dr. A. Gopalakrishnan, Director, CMFRI addressing the delegates at the Workshop

Kollam, Ms. M.S. Sreeji, Paragon Seafoods Pvt. Ltd, Alappuzha; Dr. J. Bindu, and Dr. Femeena Hassan, Senior Scientists, CIFT, Kochi and scientists of CMFRI.

The following points emerged as recommendations and action points.

1. It is for the first time in the country that a fisheries is managed by a participatory governing council (Ashtamudi Clam Governance Council). This is a model which could be replicated for other high-value small-scale fisheries in India.
2. The restriction on exports of clams having more than 1400 count has to be strictly followed by all procurement agents and exporters. The fishermen should use only 35 mm mesh nets which should be vigorously shaken to allow escape of small clam.
3. The Minimum Legal Size (MLS) for clams has been fixed as 20 mm (measured from Anterior Posterior Margin - APM). MPEDA should ensure that export of clams with counts larger than 1400 should not take place. M/s Esmario,
4. It was suggested that MPEDA should take steps to ensure that the shellfish (clam) growing waters in Ashtamudi Lake is continuously monitored as per EU norms, in order to enable exports to Europe as done in Padanna, Kasaragod for farmed mussels.
5. Since MSC certification can help bring premium price to the short-neck clams, MPEDA should promote the availability of such a product from India in all trade/export fairs. Exporters should take the help of MPEDA/CIFT to develop new seafood mix products with clams and also half-shell products from clams.
6. The costs of MSC certification can be brought down if trained certifiers from India are available with accredited third-party certifiers. Hence fisheries research and education institutes should explore this possibility.

Brainstorming session on Oil sardine

The Veraval Regional Centre of CMFRI hosted the Brainstorming session on Indian Oil sardine organised by the Pelagic Fisheries Division, CMFRI from 9-11 September 2014. The Scientists of the Division participated in the programme. The brainstorming exercise was held to review the work done so far and undertake short-term time-bound specific researchable issues to come up with probable answers to the several questions raised on Indian Oil sardine, one of the most important fishery resource of the country. The sessions witnessed

active interactions, identified the knowledge gaps and listed out tasks

on a priority basis along with time frame for each activity.



Brainstorming session on Indian Oil sardine in progress

Summer School on Marine Finfish and Shellfish Seed Production

The ICAR sponsored Summer School on "Technological advancements in the seed production of marine finfish and shellfish" was conducted at the Mandapam Regional Centre of Central Marine



Participants visiting broodstock cages



Participants tagging a Pompano brooder



Participants of the Summer School

Fisheries Research Institute (CMFRI) during 20th August to 9th September 2014. A total of 22 participants from Tripura, Kerala, Karnataka, Andhra Pradesh, Maharashtra and Tamil Nadu participated in the Summer School.

The Summer School was inaugurated by Dr. P.S.B.R. James, Former Director of CMFRI. Dr. G. Gopakumar, Head, Mariculture Division and Scientist in Charge of



Release of Course Manual by Dr. P.S.B.R. James, Former Director, CMFRI

Mandapam Regional Centre presided over the function. Dr. M. Karthikeyan Deputy Director, Department of Fisheries, Government of Tamil Nadu delivered the felicitation address. In his inaugural speech Dr. James stated that although capture fisheries sector is a major contributor of seafood at present, only by enhancing mariculture production it will be possible meet the growing demand of seafood in our country. In this context he affirmed that the summer school will help in development of technical manpower. Dr. A.K. Abdul Nazar, Senior Scientist & Course Director delivered the welcome address and Dr. R. Jayakumar, Senior Scientist & Course Coordinator proposed the vote of thanks.

During this Summer School 37 lectures were delivered by the

scientists and eminent invited experts on marine finfish brood stock development, reproductive physiology and hormonal induction, live feed cultures of microalgae, rotifers, copepods, cladocerans and *Artemia*, enrichment of live feeds, larviculture protocols, nursery rearing techniques and farming methodologies of finfishes and shellfishes. Hands-on practical training to the participants on cannulation and examination of gonadal biopsies, PIT tagging techniques, culture of microalgae, rotifers, cladocerans and *Artemia* were provided. Exposure visits to shell craft industries, cage farming, seaweed farming and processing units, private ornamental fish breeding units, coral reef habitats in Palk Bay and Kurusadai Island were arranged for the participants.

Trawl Ban Review Report submitted

The Dept. of Animal Husbandry, Dairying and Fisheries (DAHDF), Ministry of Agriculture, Govt. of India constituted a Technical Committee (TC) with the mandate To review the Duration of the Ban Period and to Suggest Further Measures to Strengthen the Conservation and Management Aspects vide its order no. 30035/15/97 Fy(T-1) dated 7th May 2013. The chairman of the TC was Director, CMFRI with following members – Shri. B. Vishnu Bhat, Fisheries Development Commissioner, New Delhi; Directors of State fisheries Departments, Taminadu and Karnataka; Y. S. Yadava, Director, BOBP-IGO, Chennai; Dr. E. Vivekanandan, Emeritus Scientist, CMFRI; Dr. Leela Edwin, Principal Scientist, CIFT, Shri. Rambhai Patil, Chairman, Nation Fish Workers Forum, Mumbai and DG, Fishery Survey of India as Member-Secretary. Dr. P. U. Zacharia and Dr. K.Vijayakumaran, Principal Scientists of CMFRI were also co-opted as members of the committee. After holding several discussions with stake holders the TC submitted its report in September, 2014.



Stakeholders meeting on seaweeds

A stakeholders meeting involving seaweed farmers, collectors, processing industry, conservation officials and researchers was conducted at Mandapam Regional Centre of CMFRI on 24th July 2014. One of the recommendations that emerged from the discussions was to farm *Kappaphycus alvarezii* at slightly deeper waters where the temperature is ideal for good growth. Older methods like raft and monoline methods can be replaced by improved methods for effective seaweed farming. Another major recommendation that emerged from the meeting was to recognise seaweed cultivation as an agricultural practice so that it is entitled for insurance coverage in case of crop



Discussions during stakeholders on seaweeds

loss during natural calamities. The participants expressed their desire to regularly conduct this meeting every

year for exchange of views and solve the problems facing the seaweed industry.

Consultation meeting on Sea cucumber

A Consultation Meeting on Sea cucumber was conducted at Mandapam Regional Centre of CMFRI on 14th August 2014. About 80 stakeholders participated the meeting representing Department of fisheries, Forest Department, Coastal Marine Police, Indian Coast Guard, fishers, seafood traders and NGOs. Dr. D.B. James, Principal Scientist (Rtd.) chaired the meeting while Thiru. K Venkatesh IFS, Conservator of Forest was the Chief Guest. Presentations were made by Shri. R. Saravanan, Scientist and Dr. P.S. Asha, Principal Scientist, Tuticorin Research Centre. Following points emerged during the discussions.

Stock assessment of existing biomass (juveniles / adults) of different species of sea cucumbers has to be undertaken to assess the current status of the population consequent to the implementation of ban from 2001.

The option to allow the harvest of sea cucumbers above 75 mm size and restricting the collection of undersized ones and for closure of sea cucumber fishing during peak spawning period of the year to enable successful breeding and recruitment can be considered for the commercially important species, if a decision to lift the blanket ban is made. CMFRI can take up the standardization of seed production of selected species of sea cucumbers. Farming trials can also be undertaken to find out the feasibility of sea cucumber production through aquaculture. The fisherfolk participants explained the deterioration of their livelihood because of the ban and demanded the lifting of ban for the collection of three species of sea cucumbers *Holothuria scabra*, *H. spinifera* and *Actinopyga echinites*. A detailed scientific investigation on the distribution, availability, abundance

and biological parameters of sea cucumbers from Gulf of Mannar region in order to generate database for developing a management roadmap were also suggested.

National workshop on Marine Biodiversity & Climate Change at Karwar Research Centre

A national workshop on Marine Biodiversity & Climate Change was organized at the Karwar Research Centre of Central Marine Fisheries Research Institute, Karwar on 21st and 22nd May 2014. During the scientific sessions, more than 100 scientists and researchers from various part of India participated and presented their research findings on different aspects such as marine biodiversity including corals, mangrove and estuarine resources, climate change and livelihood issues.



Dr. D.B. James, interacting during the Consultation Meeting



*National Workshop
at Karwar RC*

Shark Conservation Awareness

An awareness programme on "Conservation of sharks in Indian Seas" was organized by Mumbai RC of CMFRI in collaboration with The Satpati Fishermen Co-Operative Society Ltd. and the Satpati Macchimaar Vividh Karyakar Saharkari Sanstha Maryadit, Satpati on 8th August 2014. The awareness programme was inaugurated by Shri. Rajendra D. Gavit, Hon'ble Minister of State for Tribal Development, Labour, Command Area Development and Horticulture, Govt. of Maharashtra, in presence of fishermen leaders. The programme was presided by Dr. Veerendra Veer Singh, Principal Scientist & Scientist in-Charge, MRC of CMFRI, Mumbai.



Shark Conservation Awareness programme in progress

Dr. G. B. Purushottama, Scientist and Co-ordinator of this programme, Dr. V. S. Somvanshi, Former, Fishery Survey of India, Mumbai, Shri. S. G. Raje, Principal Scientist (Rtd.), and Dr. Shoba Joe Kizhakudan, Senior

Scientist, Madras Research Centre of CMFRI, Chennai also attended the programme as resource persons. About 150 participants were sensitized during the awareness programme.

Marine Fishing Regulations Act awareness programme

The SEETT Division organised awareness programme on 'Kerala Marine Fishing Regulation Act (KMFRA) at Munambam on 8th and

9th in collaboration with Central Board of Workers' Education (CBWE). The programme was inaugurated by Pallipuram Grama panchayat President Smt. Chinnamma Dharman.

Session dealt with KMFRA Regulations and Penalties, Sea safety measures, Coastal security measure and fishermen community and about hygienic measures necessary in the coastal village sanitation. The suggestions and recommendations brought out during the awareness programme have been submitted to



Mr. K. M. Sajeev, Marine Enforcement Wing, Vypin taking a class

the State Department of Fisheries, Central Marine Enforcement Wing, Coast Guards and Coastal Police Department.



Inauguration of the awareness programme on KMFRA

Cage farming awareness programme at Belpukur, South 24 Paraganas, West Bengal

On 8th July, 2014, "Cage culture Awareness Programme" was conducted at Belpukur, South 24 Paraganas, West Bengal on the invitation from the Panchayat Pradhan, Mrs. Manasi Das. Dr. Shubhadeep Ghosh, Scientist-in-Charge, Visakha-

patnam RC of CMFRI led the program and was assisted by Dr. Biswajit Dash, STO & Co PI of NFBSFARA, Hilsa project. Mr. B.K. Barman, Senior Technical Assistant, FRAD division CMFRI, Contai Field Centre and Mr. Samrat Paul, SRF, Hilsa project. 35

marine fishermen of four societies of the panchayat attended the programme. They were told about the techniques of cage farming and the possible scope for Hilsa cage farming considering the availability of natural seed resource in Ganga river near Belpukur.

Training programmes organised

Under the UNDP Sindhudurg Cetacean Project two training programs on "Stranded Marine Mammals

Species Identification, First Aid, Rescue and Disposal" were conducted by Mumbai Research Centre during 24-27th

July 2014 and 7th to 8th August 2014 for the benefit of local officials from veterinary and forest departments.

Professional Attachment training at CMFRI

Three ARS probationers namely Shri. Sandeep, K.P., Kumari. Pragyan Dash, Dr. Satheesha Avunje from CIBA, Chennai and two ARS probationers namely Shri. J. Raymond

Jani Angel and Shri. Anuraj, A. from CARI, Port Blair completed their three months Professional Attachment training at Mandapam Regional Centre of CMFRI under the

mentorship of Dr. G. Gopakumar, Scientist-in-Charge and Head, Mariculture Division.

Onam Celebrations 2014

Onam, the traditional festival of Kerala was celebrated at the HQ and various centres with traditional pomp and gaiety. At HQ, Pookalam Competition was held in which ten teams participated. The Marine Biotechnology Division team won the first prize followed by the Fishery Environment Management Division. Third prize was shared by the Socio Economic Evaluation and Technology Transfer Division and Molluscan Fisheries Division. Traditional onam



Winners of the Pookalam Competition being announced

feast "Onasadya" was arranged in the canteen where staff and family members participated to make it a joyful occasion.



Onasadya at HQ



Onam celebrations at Vizhinjam RC



Onam celebrations at Mangalore RC

CMFRI team won first prize in the Onam Pookalam Competition 2014 organized by the Central Government Employees Welfare Co-ordination Committee



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Independence Day celebrations



The 68th Independence Day was celebrated at Headquarters on 15th August 2014. Dr. (Mrs) B. Meenakumari, DDG (Fisheries) hoisted the National Flag and addressed the staff of the Institute.

Dr. B. Meenakumari, DDG (Fisheries) at the Independence Day celebrations at HQ



Dr. A. Gopalakrishnan, Director, CMFRI hoisting the National Flag

The 68th Independence Day celebrations at Mandapam Regional Centre of CMFRI was led by Dr. A. Gopalakrishnan, Director, CMFRI who hoisted the National Flag and addressed the staff. The Recreation Club also organized sports events and a cultural evening where prizes to the winners in various competitions were distributed.



Dr. A. Gopalakrishnan, Director, CMFRI delivering the Independence Day speech



Cultural programme on Independence Day by the students of CMFRI Nursery school

New facilities commissioned at Karwar Research Centre

The newly installed cold storage facility and the nursery rearing facility with state of the art sea

water intake and filtration system were commissioned by Dr. A. Gopalakrishnan, Director, CMFRI.

A brochure on Karwar RC was also released on the occasion.



Director releasing a brochure on the Karwar RC



Commissioning of cold storage facility at Karwar

CMFRI bags the Indira Gandhi Rajbhasha Puraskar for the third time

CMFRI bagged the prestigious *Indira Gandhi Rajbhasha Puraskar* for the excellent work and commendable achievements in the implementation of Official Language Policy during the year 2012-13 in the category of Autonomous Bodies in Region 'C'. Rajbhasha awards are given by the Ministry of Home Affairs every year on the *Hindi Diwas* which falls on September 14. It is the third time the institute is bagging the coveted prize.

Dr. A. Gopalakrishnan, Director, CMFRI received the award from Hon'ble President of India Shri Pranab Mukherjee at a function organized at



Dr. A. Gopalakrishnan, Director, CMFRI receives the Indira Gandhi Rajbhasha Puraskar from the Hon'ble President of India. Inset : Indira Gandhi Rajbhasha Puraskar

the Rashtrapati Bhavan, New Delhi on 14th September, 2014. Hon'ble Union Home Minister Shri. Rajnath Singh was also present on the occasion.

Hindi Chethana Mas observed

Hindi Chethana Mas 2014 was celebrated from 1st to 27th September, 2014 at Headquarters and various Regional and Research Centres of CMFRI. Various programmes and competitions in Hindi were held. At the Headquarters, workshop on spoken hindi and competitions in hindi such as handwriting, noting & drafting, E-governance, poetry recitation, hindi conversation etc., were held with enthusiastic participation by the Institute staff.

The valedictory function was held on 27th September 2014. Dr. (Smt.) Sunita Devi Yadav, Dy. Director (Implementation), Regional Imple-



Chief Guest Dr. (Smt.) Sunita Devi Yadav addressing the gathering at HQ



Prize distribution at HQ



Hindi workshop held at HQ



Hindi Chetana Mas celebrations at Mumbai RC



Inauguration of the Hindi Workshop by Dr. Madan Mohan, ADG (Marine Fisheries) at Visakhapatnam R C. Dr. G. Syda Rao, Former Director, CMFRI is also seen in the picture

mentation Office, Dept. of Official Language, Govt. of India, Cochin was the Chief Guest of the function. Dr. A. Gopalakrishnan, Director, CMFRI presided over the function. Smt. Sheela P. J., Former Dy. Director (OL) and Smt. E. Sasikala, Former Sr. Technical Officer and Smt. E.K.Uma, Asst. Chief Tech. Officer (Hindi) of the

Institute were honored on the proud occasion of bagging the Indira Gandhi Rajbhasha Puraskar for the third time. Prizes were distributed to the winners of various competitions and those who participated in the Incentive schemes. A music programme was also presented by the staff of the Institute.



Hindi Pakhwada 2014 competitions held at Veraval



Inauguration of Hindi week at Karwar RC



Hindi Week celebration at Mandapam RC



Hindi week celebrations at Vizhinjam RC



Valedictory function of Hindi Week celebrations at Chennai



Hindi talk delivered by Dr. Vageswari Sivaram, Chief Guest at Mangalore RC

QRT visits Regional & Research Centers of CMFRI

The Quinquennial Review Team (QRT) comprising the committee Chairman, Dr. N. R. Menon and members Dr. T. Balasubramanian, Dr. A. D. Diwan, Dr. K. N. Prabhudeva, Dr. Srinivasakumar and Dr. V. Kripa, Member-Secretary visited various regional and research centres of CMFRI where they interacted with scientists and staff.



QRT Team with Dr. Rani Mary George, SIC, Vizhinjam Research Centre



Interactions with scientists at hatchery complex of Vizhinjam RC



Presentation by Dr. Vijayakumaran, SIC during the QRT visit at Chennai



QRT team interacting with Dr. Subhadeep Ghosh, SIC, Visakhapatnam RC

Visits of Quinquennial Review Team for Review Period 2009-14

Centre	Dates of visit
CMFRI Hqrs., Kochi	11.06.2014 to 12.06.2014
Madras RC of CMFRI	02.09.2014 to 03.09.2014
Visakhapatnam RC of CMFRI	04.09.2014
Vizhinjam RC of CMFRI	22.09.2014

Visit of Dignitaries

GEF- NAIP-ICAR World Bank Review Mission visited Mumbai RC of CMFRI and Rural Resource Centre of NAIP project from 25th to 27th August 2014. The members of Review Mission Team included Prof. (Dr.) Ravindra Nath, Indian Institute of Science, Bangalore, Dr. Ranjan Samantary, World Bank, Ms. Sharlin and Ms. Indu Murti.



World Bank Review Mission team holding discussions with Dr. V. V. Singh, SIC, Mumbai RC

Dr. Usha Varanasi, Former Director, Northwest Fisheries Science Center (NWFSC) and Dr. Ned

Cyr, Director, National Marine Fisheries Service NOAA, USA visited CMFRI, Kochi on 8th August, 2014.

- **Dr. A. Gopalakrishnan**, Director attended the following

16th EFC meeting convened under the chairmanship of Director General at ICAR, New Delhi during 15-18 July, 2014.

86th Foundation Day and ICAR Award Ceremony at ICAR, New Delhi on 29th July, 2014.

Conference of ICAR Directors and Vice-Chancellors of AUs in the A. P. Shinde Auditorium, NASC, Pusa, New Delhi on 29th and 30th of July 2014.

Executive Development Programme on "Leadership Management" at NAARM, Hyderabad during 19-23 August, 2014.

India-Sri Lanka Joint Committee meeting at New Delhi on 29th August, 2014.

Meeting with Dr. Jose Graziano de Silva, Director General, FAO and the Meeting of Vice Chancellors and Directors of ICAR Institutes at New Delhi on 8th September, 2014.

Hindi Diwas Celebrations and Awards Ceremony organised by the Rajbhasha Vibhag, Ministry of Home Affairs, Govt. of India at the Rashtrapati Bhavan Auditorium, New Delhi on 14th September, 2014

5th meeting of Scientific Panel for Fish and Fisheries Products at New Delhi on 19th September, 2014.

- **Dr. G. Gopakumar**, Head, Mariculture Division & SIC Mandapam Regional Centre attended XIIth Plan EFC meeting for CMFRI at New Delhi from 13 – 17 July, 2014.
- **Dr. G. Gopakumar** and **Dr. B. Johnson**, Scientist participated the brainstorming workshop on Interventions for the sustainable management of the Palk Bay organized under Indo-German CMPA Project in Palk Bay at Rameswaram on 25th September 2014.
- **Dr. P. U. Zacharia**, Head, Demersal Fisheries Division attended Second National Mission Meeting on Conservation of Sharks at Chennai on 25th July 2014.
Finalization meeting of the Trawl Ban Report and preparation of NPOA of Shark at Chennai RC of CMFRI on 19th September 2014.
- **Dr. V. Kripa**, Principal Scientist & Head, FEMD attended
Clam Council Meeting held at Kollam Collectorate, Kollam on 12th August 2014
Attended the QRT Meeting at Madras Research Centre & Visakhapatnam Regional Centre during 2-5 September, 2014 and Vizhinjam Research Centre on 22nd September 2014 as Member Secretary, QRT

Foreign deputation

- **Dr. Sunil Mohammed & Dr. K. K. Joshi in Thailand**

Dr. Sunil Mohammed, Head, Molluscan Fisheries Division and **Dr. K. K. Joshi**, Head, Marine Biodiversity Division participated in the Training workshop.

"Application of ECOPATH with ECOSIM (EwE)" on 08th-12th September, 2014 at Phuket, Thailand sponsored by the Bay of Bengal Large Marine Ecosystem (BOBLME). BOBLME has been collaborating with the University of British Colombia to develop a working model of the Bay of Bengal marine ecosystem using the Ecopath with Ecosim (EwE) software (www.ecopath.org). The objective of the workshop was to engage experts from the Bay of Bengal region to verify, validate and where necessary provide information to improve the model workshop was led by Dr. Villy Christensen, the core developer of Ecopath.



- **DST sponsored Exposure Visit**

Dr. Vinod, K., Principal Scientist, Calicut Research Centre of CMFRI, participated in the Exposure Visit to Scientific Institutions and Laboratories in Russia during



Indian delegation at Lomonosov Moscow State University, Moscow

13-19 September 2014 which was sponsored by the Department of Science & Technology, Government of India, under the scheme "National Programme for Training of Scientists / Technologists working in the Government sector". The Indian delegation comprising several scientists and technologists from diverse fields

was headed by Dr. Inderjit Singh, Joint Secretary (Administration & Training), Ministry of Science & Technology.

- **IMBER workshop at Shanghai**

Dr. (Mrs.) Rekha J. Nair, **Dr. (Mrs.) Somy Kuriakose**, and **Dr. Grinson George**, Senior Scientists attended the IMBER ClimEco4 Summer School at Shanghai, China during 4-9 August, at East China Normal University, Shanghai. The Summer School was hosted by IMBER and part funding was provided by Asia-Pacific Network for Global Change Research (APN) and Scientific Committee on Oceanic Research. IMBER focuses on the interactions and linkages between biogeochemical cycles and food webs, including humans, with the aim of improving the predictive capacity for marine ecosystems increasingly affected by global change.



Participants at the IMBER Summer School held in Shanghai

- **Dr. Prathibha Rohit**, Principal Scientist and Head (i/c) Pelagic Fisheries Division attended the Fourth session of IOTC working party on Neretic tunas (WPNT 04) at Phuket, Thailand from 29th June to 2nd July, 2014.
- **Dr. A. P. Dineshababu**, Principal Scientist attended the workshop on "Use of best available science in developing and promoting best practices for trawl fishing operations in South and Southeast Asia (SSA)" as a country expert in trawl fishery of India at Bangkok during 11th-13th, September, 2014.

- **Dr. V. Kripa & Dr. D. Prema**, Principal Scientist, attended a workshop on 'Development of predictive capabilities on Marine fisheries and harmful algal blooms in Indian seas' organized jointly by INCOIS, CMLRE & NOAA (USA) at the Avenue Regent, Kochi during 22-26 September, 2014.
- **Dr. K. S. Mohamed**, Head, MFD attended
A meeting with Dr. Usha Varanasi, Former Director, Northwest Fisheries Science Center (NWFSC) and Dr. Ned Cyr, Director, National Marine Fisheries Service NOAA, USA at CMFRI, Kochi on 8th August 2014.
Ashtamudi Lake Clam Council Meeting held at Kollam Collectorate, Kollam on 12th August 2014.
Meeting on WOSC, theme Biodiversity 14th August 2014 at KUFOS, Panangad.
Delivered a lecture on 'Trophic modeling of Aquatic Ecosystem' in the Training programme on "Fish Stock Assessment and Management" organized by FRAD on 27th September 2014.
Attended the "Meeting on Findings of Case Study on Ashtamudi Lake and Guiding Case Study on Seasonal Fishing Ban" on 25th September 2014 at New Delhi organised by GIZ India.
- **Dr. G. Maheswarudu**, Head, CFD attended Consultative Workshop on Benefits of MSC Certification of Astamudi Short Neck Clam Fishery" held at CMFRI, Cochin on 04th September 2014.
- **Dr. K.K. Philipose**, SIC, Karwar RC attended
Institute management committee meeting of the ICAR Research Complex for Goa on 1st July 2014.
Meeting on 'Activities to be taken under the powers of KSCZMA for protecting and improving the quality of coastal environment and preventing, abating and controlling environment pollution in areas of the Karnataka state' organized by Office of the Regional Director (Environment), Karwar at the Science Centre, Karwar on 20th September 2014.
Meeting on Shoreline Management Plans of Uttarakannada organized by office of the Project Director, Sustainable Coastal Protection & Management Investment Programme, Mangalore held at the office of the Deputy Commissioner, Karwar on 27th September 2014.
- **Dr. K. K. Philipose**, Principal Scientist, **Dr. S.R. Krupesh Sharma**, Senior Scientist and **Dr. T. Senthil Murugan**, Senior Scientist attended Stake holder consultation on CRZ and critically vulnerable coastal area organized by National Centre for Sustainable Coastal Management (NCSCM) at the Karwar Research Centre of CMFRI on 19th September 2014.
- **Dr. K. Vijayakumaran**, Principal Scientist & SIC, Madras RC
Participated in a one-day Stakeholder's Meet conducted by the Association of Deep-Sea Going Fishermen (ADSGF), Thuthoor, at Chennai on 25th July 2014.
Gave an inaugural talk entitled 'Are We Ready for Ecosystem Approach to Fisheries Management' on 11th August 2014 at the International training on Ecosystem Approach to Fisheries Management organized by BOBP IGO under the aegis of the GEF funded BOBLME project.
Delivered the key-note address entitled Regional initiatives in management of shared and common resources—Examining reality and exploring possibilities at the opening of the 6th regional CCRF training programme organised by BOBP-IGO on 20th September 2014.
Attended the meeting of the project team of the project Economics of Biodiversity Loss: A study of the by-catch from Andhra Pradesh Marine Fisheries at CESS, Hyderabad on 21st September 2014.
- **Dr. Prathibha Rohit**, Principal Scientist and Scientist-in-charge Mangalore RC attended
Management Development Programme on Leadership Development from 15th-26th July 2014 at NAARM, Hyderabad.
Technical and Financial Evaluation (TFE) meeting for finalizing the satellite tags for SATTUNA Project during 7th – 9th August, 2014 at INCOIS, Hyderabad.
- **Dr. Prathibha Rohit** and **Dr. A. P. Dineshbabu**, Principal Scientists attended the meeting on the need for Mega floating Harbour off Mangalore coast convened by Deputy Commissioner, Dakshin Kannada District at Mangalore on 26th August, 2014.
- **Dr. A. P. Dineshbabu**, Principal Scientist attended and participated in the brain storming session on "Insects related to Veterinary and fisheries Sciences" and presented the topic "Isopod parasites infestation in marine fishes" held on 2nd August, 2014 at the National Bureau of Agriculturally Important Insects (ICAR), Bangalore.
- **Dr. Prathibha Rohit**, Principal Scientist and SIC Mangalore, **Dr. M. Sivadas**, **Dr. A. Margaret Muthu Rathinam**, **Dr. E. M. Abdussamad**, Principal Scientists, **Shri. K. P. Said Koya**, Scientist, **Dr. U. Ganga**, **Dr. K. M. Rajesh**, Sr. Scientists, **K. Mohamed Koya** and **Ms. Anulekshmi Chellappan**, Scientists participated in "Brainstorming session on Oil Sardine" held at Veraval Regional Centre of CMFRI from 9th to 11th September 2014.
- **Dr. P. Kaladharan**, Principal Scientist attended
A review meeting of UNDP/GEF funded project at the office of Chief Conservator of Forests and Nodal officer, Mangrove Cell, Bandra, Mumbai and presented the project proposal on 'EIA of Crab farming in Mangrove flats of Sindhudurg area on 10th July 2014.
National seminar on algae for sustainable Agricultural Production at College of Agriculture and Research Institute, Madurai during 29th-30th September, 2014 and presented a paper on *Kappaphycus* cultivation.
- **Dr. Shubhadeep Ghosh**, Senior Scientist and Scientist-in-Charge Visakhapatnam Regional Centre and **Dr. Ritesh Ranjan**, Scientist attended the 4th Advisory Committee Meeting for the NBSFARA "Stock characterization, captive breeding, seed production and culture of hilsa (*Tenualosa ilisha*)" project at CIFRI, Barrackpore from 8th - 10th July 2014.
- **Dr. K. S. Sobhana**, Principal Scientist attended DBT Task Force Meeting on Aquaculture and Marine Biotechnology held at DBT, New Delhi during 24th – 25th July 2014.
- **Dr. C. P. Suja** and **Dr. Vidya Jayasankar**, Senior Scientists attended the 'Refresher Course on Agricultural Research Management' during July 14th-26th at National Academy of Agricultural Research Management, Hyderabad.
- **Dr. K. Vinod**, Principal Scientist, Calicut RC of CMFRI, attended the 1st Meeting of the re-constituted National Committee on Mangroves and Coral Reefs at Indira Paryavaran Bhawan, Ministry of Environment, Forests & Climate Change, New Delhi on 22nd August, 2014.
- **K. Mohammed Koya**, Scientist and SIC, Veraval RC Attended the XXIII Meeting of ICAR Regional Committee No. VI held at Anand Agricultural University, Anand on 12th and 13th September, 2014.
- **Ms. Anulekshmi Chellappan**, **Dr. Purushothama G.B.** and **Ms. Karthireddy Syamala** Scientists, Mumbai RC participated in the Awareness Programme on "Conservation of sharks in Indian Seas" organized by Mumbai RC of CMFRI on 8th August 2014 in collaboration with the Satpati Fishermen Co-Operative Society Ltd., Satpati & Satpati Macchimaar Vividh Karyakari Sahakari Sanstha Maryadit, Satpati at Satpati, Palghar Taluka & District, Maharashtra.

- **Dr. I. Rajendran**, Senior Scientist and **Shri. R. Saravanan**, Scientist participated the National Seminar on "Algae for Sustainable Agricultural Production" held at Agricultural College & Research Institute, Madurai on 29th – 30th September 2014.
- **Mr. S. Ramkumar**, Scientist, Mumbai RC organized and participated in two 2-days training programme under the UNDP Sindhudurg Cetacean Project on creating awareness regarding rescue and post-mortem analysis of beached or stranded cetaceans along Sindhudurg coastline for Forest department officers and Veterinary doctors at Malvan on 24th-25th July 2014 and 7th and 8th August 2014.
- **Dr. N. Aswathy**, Senior Scientist, SEETTD attended MDP on "Advanced analytical tools for social sciences" at NAARM, Hyderabad from 17th to 26th September 2014.
- **Shri. L. Ranjith**, Scientist attended the Consultation Meeting on Sea cucumbers held at Mandapam Regional Centre of CMFRI on 14th August 2014.
- **Dr. Joe K. Kizhakudan**, Senior Scientist
Convened a meeting with fishermen of Oyalikuppam village, Irula tribe members and the Vayalurpanchayat President on 2nd July 2014 regarding the TSP

programme launch in Oyalikuppam coastal village.

Gave an interview representing the institute on 3rd July 2014, for a TV documentary on the consultancy project being carried out for IFAD-PTSLP on the installation of Artificial Reefs in the inshore waters of Tamil Nadu.

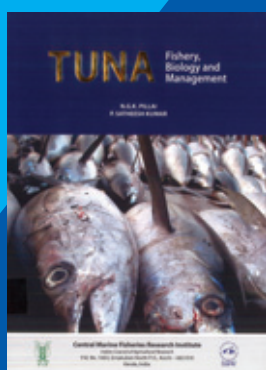
- **Dr. Shoba Joe Kizhakudan**, Senior Scientist and **Dr. R. Geetha**, Scientist convened a fishermen meeting with the Kovalam fishermen at the Kovalam Field Laboratory of the Madras Centre on 15 July 2014 and for feedback assessment on the reef fishery, in connection with the installation of the artificial reef under the IFAD-PTSLP consultancy project.
- **Dr. Shoba Joe Kizhakudan**, Senior Scientist
Participated as resource person in an awareness programme on "Shark Conservation" at Satpati fishing village, Palghar Dt., Maharashtra, organized by Mumbai RC of CMFRI on 8th August 2014.
Capacity building workshop on CITES Appendix II listing of sharks and Manta ray species convened by the Ministry of Environment, Forests and Climate Change (MoEF&CC), Government of India in collaboration with C.P.R. Environmental Education Centre (CPREEC) at Chennai, from 26th to 28th

August 2014 and gave an invited talk on "Overview of India's Shark Fisheries."

A one-day Stakeholder's meet conducted by the Association of Deep-Sea Going Fishermen (ADSGF), Thuthoor, at Chennai on 25th July 2014, towards discussions on the preparation of a National Plan of Action for shark fishing in India.

- **Dr. R. Jeyabaskaran**, Senior Scientist, participated the 'Project Planning Meeting' related to IUCN_MFF Project entitled "Living Resources of Gulf of Mannar: Assessment of Key species and habitats for Enhancing awareness and for conservation Policy formulation" (Project Code No. 5001/1942) on 23rd-25th July 2014 at IUCN-MFF, Chennai.
- **Dr. Sekar Mekarajan**, Scientist attended as resource person for the DBT sponsored National Seminar on "Immuno-molecular techniques and its application" at the Centre for Advanced Studies in Marine Biology, Faculty of Marine Sciences, Annamalai University, Parangipettai, Tamil Nadu on 12th and 13th September 2014.
- **Dr. Josileen Jose**, Principal Scientist, **Dr. S. Lakshmi Pillai**, **Dr. Rekha Devi Chakraborty**, **Dr. K. M. Rajesh** (Senior Scientists) **Dr. V. Venkatesan**, Scientist and **Sri. K. K. Sajikumar**, Technical Assistant participated in the training programme on 'Fish stock assessment and management' during 15th-27th September, 2014 conducted at CMFRI, Kochi.

Publications



Pillai, N.G.K and Satheesh Kumar, P. 2014. **Tuna: Fishery, Biology and Management** Central Marine Fisheries Research Institute, Kochi. 222 p.



Nair, Rekha J. and Kuriakose, Somy 2014. **Field Guide on Reef Associated Fishes of India** CMFRI Special Publication (117). Central Marine Fisheries Research Institute, Kochi. 152p.



Dineshbabu, A. P., Sasikumar, Geetha, Rohit, Prathibha, Thomas, Sujitha, Rajesh, K. M. and Zacharia, P. U., (Eds). 2014. **Methodologies for studying finfish and shellfish biology**. Central Marine Fisheries Research Institute, Kochi. 91p.



DVD Movie

Vipinkumar V. P., Mohamed K. S., Asokan P. K. and Gopalakrishnan A. 2014. **Awakening Saga of Women SHGs in Bivalve Farming in Kerala**. DVD Movie, CMFRI, Kochi.



ASSUMPTION OF CHARGE

1. Dr. T. V. Sathianandan, Principal Scientist, CMFRI, Kochi assumed charge as Head, Fishery Resources Assessment Division of CMFRI on 12.09.2014.
2. Dr. K. K. Joshi, Principal Scientist, CMFRI Kochi assumed charge as Head, Marine Biodiversity Division of CMFRI on 15.09.2014.

INTER-INSTITUTIONAL TRANSFERS

Names & Designation	From	To	w.e.f
1. Dr. K. K. Vijayan, Principal Scientist & Head, MBTD	CMFRI Hqrs., Kochi	CIBA, Chennai as Director	19.08.2014
2. Smt. Zulekha, Steno Grade. III	CARI, Port Blair	CMFRI Hqrs.	29.07.2014

TRANSFERS

Names & Designation	From	To	w.e.f
1. Dr. K. Vinod, Principal Scientist	Madras RC	Calicut RC	11.07.2014
2. Dr. P. P. Manojkumar, Principal Scientist	Calicut RC	Tuticorin RC	11.09.2014
3. Dr. D. Divu, Scientist	Karwar RC	Veraval RC	14.07.2014
4. Shri C. Kalidas, Scientist	Mandapam RC	Tuticorin RC	15.09.2014

RE-DESIGNATION

Name, Designation & Centre	Re-Designated as	w.e.f
1. Dr. (Smt.) Sujitha Thomas, Scientist, Mangalore RC of CMFRI	Senior Scientist	05.12.2007
2. Dr. (Smt.) Geetha Sasikumar, Scientist, Mangalore RC of CMFRI	Senior Scientist	09.06.2008
3. Dr.(Smt.) S. Lakshmi Pillai, Scientist, CMFRI Hqrs.	Senior Scientist	27.06.2008
4. Dr. (Smt.) Sobha Joe Kizhakudan, Scientist, Madras RC of CMFRI	Senior Scientist	29.08.2011

We salute the seniors on their retirement



Smt. P. J. Sheela
Deputy Director (OL)
31.07.2014 CMFRI Hqrs.



Shri V. Edwin Joseph
Assistant Chief Technical Officer
(Library) 31.08.2014 CMFRI Hqrs.



Shri L. R. Khambadkar
Technical Officer
31.08.2014 CMFRI Hqrs.



Shri. Pulin Behari Dey
Technical Officer
31.08.2014 Contai FC



Shri J. Bhubaneswara Varma
Technical Officer
31.08.2014 Visakhapatnam RC



Shri. K. U. Raman
Technical Assistant (Motor Driver)
31.08.2014 Mandapam RC



Shri. M. G. Sivadasan
Technical Officer (Electrical)
30.09.2014 CMFRI Hqrs.



Shri. K. K. Sankaran
Technical Officer (Artist)
30.09.2014 CMFRI Hqrs.



Smt. V. K. Janaki
Technical Officer
30.09.2014 Calicut RC



Shri. Mangalsingh Surajsingh Zala
Technical Officer
30.09.2014 Veraval RC



Smt. M. V. Valsala
Technical Assistant
30.09.2014 Calicut RC



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- Track 5 - Marine biotechnology
- Track 6 - Livelihood and economics
- Special Track : 50 years after the International Indian Ocean Expedition (IIOE) - Status of Indian Ocean studies

New vessel R.V. *Cadalmin I* commissioned

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cadalmin

CMFRI Newsletter

Cadalmin, the CMFRI Newsletter is a quarterly publication of the Central Marine Fisheries Research Institute, Kochi. The publication gives an insight into the major events of the quarter, besides highlighting the salient findings in the research front and dissemination of technological know-how to the farming community.